

Wei Xu

Curriculum Vitae

Assistant Professor
The Department of Neuroscience
UT Southwestern Medical Center

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Education

2003-2008 Ph.D. in Neuroscience, University of Southern California
1998-2001 M.S. in Physiology, Peking University
1993-1998 B.M.in Clinical Medicine, Henan Medical University

Employment

2014-present Assistant Professor, Department of Neuroscience, UT Southwestern
2008-2014 Research Associate, HHMI / MCP, Stanford University
2008 Visiting Research Associate, HHMI Janelia Farm Research Campus
2002-2003 Research Fellow, Brain Research Centre, University of British Columbia
2001-2002 Research Fellow, The Hospital for Sick Children / University of Toronto

Teaching Experience

2006 Teaching Assistant, Molecular Biology, University of Southern California
2005 Teaching Assistant, Human Anatomy, University of Southern California
1999 Teaching Assistant, Experimental Physiology, Peking University

Publications

First-authored papers:

1. **Xu W*** and Südhof TC*. A Neural Circuit for Memory Specificity and Generalization. **Science**. 2013; 339(6125):1290-5. (* Corresponding authors) ([Recommended by Faculty 1000](#))
2. **Xu W***, Tse YC*, Dobie FA, Baudry M, Craig AM, Wong TP and Wang YT. Simultaneous Monitoring of Presynaptic Transmitter Release and Postsynaptic Receptor Trafficking Reveals an Enhancement of Presynaptic Activity in Metabotropic Glutamate Receptor-Mediated Long-Term Depression. **The Journal of Neuroscience**. 2013; 33(13):5867-5877. (* Both authors contributed equally to this work.) ([Recommended by Faculty 1000](#))
3. **Xu W**, Morishita W, Buckmaster PS, Pang ZP, Malenka RC and Südhof TC. Distinct Neuronal Coding Schemes in Memory Revealed by Selective Erasure of Fast Synchronous Synaptic Transmission. **Neuron**. 2012; 73(5), 990-1001. ([Previewed in Neuron](#); [Recommended by Faculty 1000](#))
4. **Xu W**, Zhou M and Baudry M. Neuroprotection by Cell Permeable TAT-mGluR1 Peptide in Ischemia: Synergy between Carrier and Cargo Sequences. **Neuroscientist**. 2008; 14(5):409-14.
5. **Xu W**, Wong TP, Chery N, Gaertner T, Wang YT and Baudry M. Calpain-mediated mGluR1alpha Truncation: a Key Step in Excitotoxicity. **Neuron**. 2007; 53(3):399-412. ([Previewed in Neuron](#); [Reviewed in Science's STKE](#))
6. **Xu W**, Lundeberg T, Wang YT, Li Y and Yu LC. Antinociceptive Effect of Calcitonin Gene-Related Peptide in the Central Nucleus of Amygdala: Activating Opioid Receptors through Amygdala-Periaqueductal Gray Pathway. **Neuroscience**. 2003; 118(4):1015-22.

Co-authored papers:

7. Bacaj T, Wu D, Yang X, Morishita W, Zhou P, **Xu W**, Malenka RC and Südhof TC. Synaptotagmin-1 and synaptotagmin-7 trigger synchronous and asynchronous phases of neurotransmitter release. *Neuron*. 2013 Nov 20;80(4):947-59.
8. Zhang Y, Pak C, Han Y, Ahlenius H, Zhang Z, Chanda S, Marro S, Patzke C, Acuna C, Covy J, **Xu W**, Yang N, Danko T, Chen L, Wernig M and Südhof TC. Rapid single-step induction of functional neurons from human pluripotent stem cells. *Neuron*. 2013 Jun 5;78(5):785-98.
9. Anderson GR, Galfin T, **Xu W**, Aoto J, Malenka RC and Südhof TC. Candidate autism gene screen identifies critical role for cell-adhesion molecule CASPR2 in dendritic arborization and spine development. *Proc Natl Acad Sci U S A*. 2012; 109(44):18120-5.
10. Sharma M, Burré J, Bronk P, Zhang Y, **Xu W**, Südhof TC. CSP_{alpha} knockout causes neurodegeneration by impairing SNAP-25 function. *EMBO J*. 2011; 31(4):829-41.
11. Pang ZP, Bacaj T, Yang X, Zhou P, **Xu W** and Südhof TC. Doc2 supports spontaneous synaptic transmission by a Ca²⁺-independent mechanism. *Neuron*. 2011; 70(2):244-51.
12. Deng L, Kaeser PS, **Xu W** and Südhof TC. RIM proteins activate vesicle priming by reversing autoinhibitory homodimerization of Munc13. *Neuron*. 2011; 69(2):317-31.
13. Yang X, Kaeser-Woo YJ, Pang ZP, **Xu W** and Südhof TC. Complexin clamps asynchronous release by blocking a secondary Ca²⁺ sensor via its accessory α helix. *Neuron*. 2010; 68(5):907-20.
14. Michan S, Li Y, Chou MM, Parrella E, Ge H, Long JM, Allard JS, Lewis K, Miller M, **Xu W**, Mervis RF, Chen J, Guerin KI, Smith LE, McBurney MW, Sinclair DA, Baudry M, de Cabo R and Longo VD. SIRT1 is essential for normal cognitive function and synaptic plasticity. *The Journal of Neuroscience*. 2010; 30(29):9695-9707.
15. Pang ZP*, **Xu W***, Cao P and Südhof TC. Calmodulin suppresses synaptotagmin-2 transcription in cortical neurons. *The Journal of Biological Chemistry*. 2010; 285(44):33930-9. (* both authors contributed equally to this work.)
16. Pang ZP, Cao P, **Xu W** and Südhof TC. Calmodulin controls synaptic strength via presynaptic activation of calmodulin kinase II. *The Journal of Neuroscience*. 2010; 30(11):4132-42.
17. Zhou M, **Xu W**, Liao G, Bi X and Baudry M. Neuroprotection against neonatal hypoxia / ischemia-induced cerebral cell death by prevention of calpain-mediated mGluR1alpha truncation. *Experimental Neurology*. 2009; 218(1):75-82.
18. Li Y, **Xu W**, McBurney MW and Longo VD. SirT1 inhibition reduces IGF-I/IRS-2/Ras/ERK1/2 signaling and protects neurons. *Cell Metabolism*. 2008; 8(1):38-48.

Patent

Michel Baudry and **Wei Xu**. C-Terminal Domain Truncation of mGluR1 α by Calpain and Uses Thereof. US Patent Application No: 2010/0144623 (Patent approved).

Funding and Awards

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| 2013-2018 | K99/R00 Pathway to Independence Award, NIH |
| 2007 | Outstanding Research Award, University of Southern California |
| 2007 | The Harrison M. Kurtz Award, University of Southern California |
| 1999 | Kwang-hua Award, Peking University |
| 1993-1998 | Awards for Excellent Student and Internship, Henan Medical University |

Invited Talks

- Dec. 2013 Neurex "The Cognitive Thalamus" workshop, Strasbourg, France
- Jan. 2013 Western University of Health Sciences, Pomona, CA
- April. 2012 IGSN Conference "Molecular Mechanisms of Synaptic Processing, Function and Dysfunction", Ruhr-Universität Bochum, Germany

Reviewer

Brain Research, PNAS, Neurotoxicity Research, PLOS ONE

Professional Memberships

- 2003-present Society for Neuroscience (SFN)
- 2008-present American Association for the Advancement of Science (AAAS)